

The Value of RECs in Renewable Project Financing

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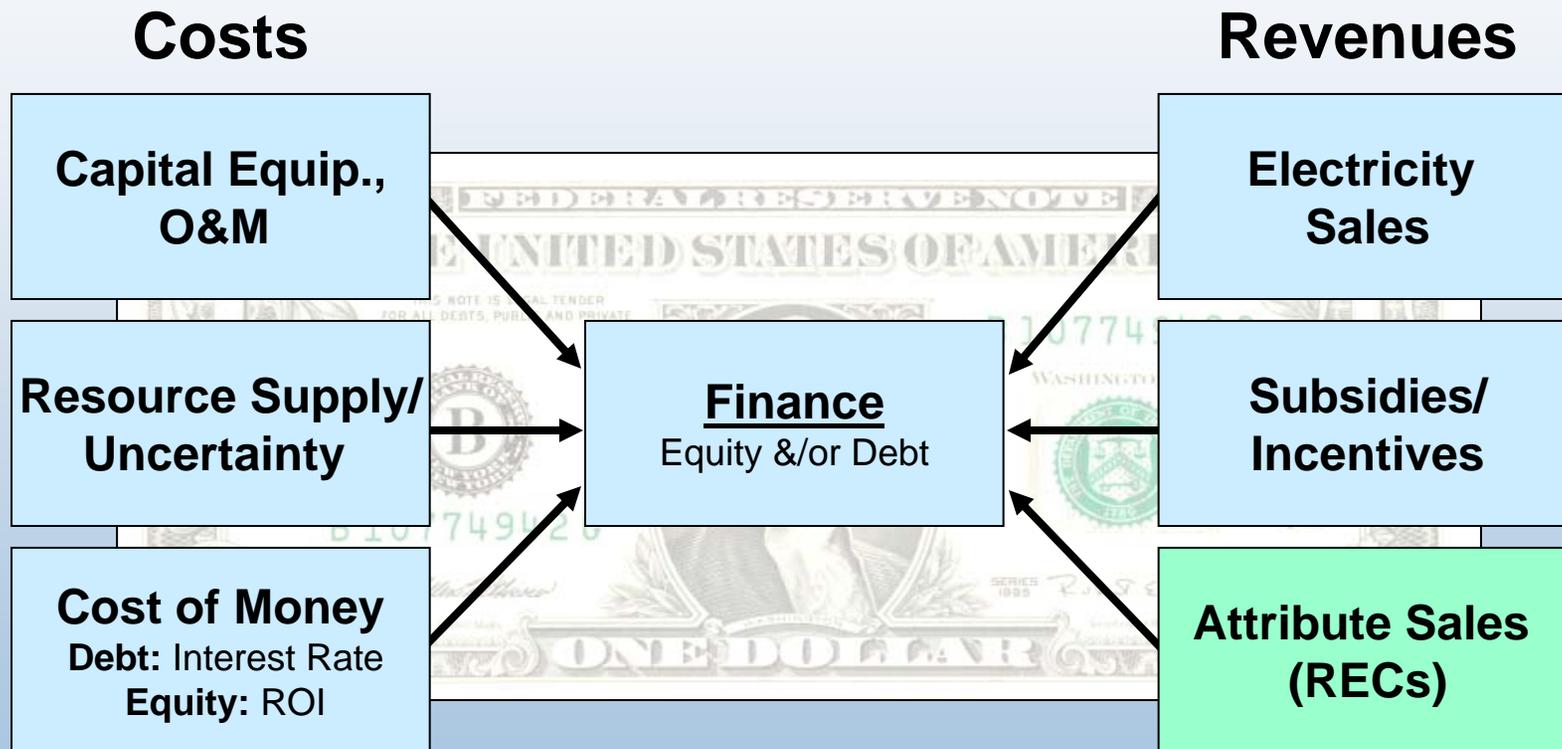
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RECs as a Revenue Stream



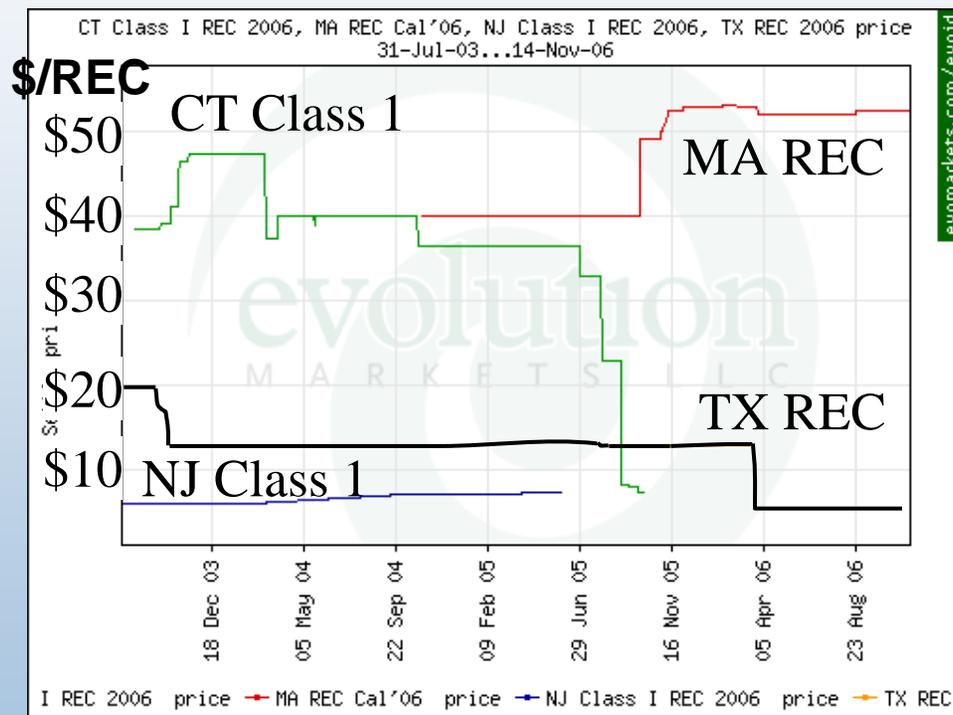
Impacts on REC Value & Project Finance

- Illiquid REC trading markets
 - Compliance vs. voluntary markets
 - Regional eligibility definitions
- Ability to secure contracts
- Project economics
 - Are REC contracts even needed?



REC Markets

Compliance RECs



2006 Compliance REC Prices

Voluntary RECs

~\$1-10/REC

REC Value

- Significantly different in the two markets
- Varies by region, often by project econ.

Differences in REC Treatment

1. “Eligible renewable” definitions
2. Shelf-life of RECs
3. Ability to bank RECs
4. Multiple RECs awarded
 - Early development or
 - Specific technologies (e.g. solar PV)
5. RECs double-counted for RPS and voluntary



Result: Smaller, fragmented, fairly illiquid markets

- Not much market transparency
- Questions on inter-region REC trading (“seams”)
- Burdensome for developers

Role of RECs in Financing - 1

| | Full Reliance on RECs | Partial/no Reliance on RECs (quasi-merchant) |
|-----------------------------------|--|---|
| Role of RECs | Essential to financing | RECs = upside potential |
| Typical Project | <ul style="list-style-type: none"> • OK RE resources • Long/expensive permitting | <ul style="list-style-type: none"> • Great RE resources • Shorter/streamlined permitting |
| Energy Financing Structure | <ul style="list-style-type: none"> • Uncertain link between elec. margin and NG • Energy revenues covered over long-term: <ul style="list-style-type: none"> ○ Contract; or ○ Resource insurance <p>→ <i>Energy revenues cannot cover most project costs</i></p> | <ul style="list-style-type: none"> • Strong link between electricity margin and NG <ul style="list-style-type: none"> • NG hedging tools avail. • Energy revenues covered: <ul style="list-style-type: none"> ○ Contract; ○ Energy hedge; or ○ Resource insurance <p>→ <i>Potentially, energy revenues cover most/all project costs</i></p> |

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Role of RECs in Financing - 2

| | Full Reliance on RECs | Partial/no Reliance on RECs (quasi-merchant) |
|-----------------------------------|--|---|
| Debt and Equity Investment | <ul style="list-style-type: none"> • Usually seek debt & must meet banker req. • Less equity = cheaper money • With contracts, less overall REC price risk <ul style="list-style-type: none"> • No opportunity for upside potential | <ul style="list-style-type: none"> • Generally, avoid/min. debt (& banker's strict requirements) • Need more equity investors to cover project costs • Greater REC price risk <ul style="list-style-type: none"> • High REC prices = upside • Low REC prices = risk |
| REC Financing Structure | <ul style="list-style-type: none"> • REC value = REC commitments • 10+ year REC deal <ul style="list-style-type: none"> • creditworthy party • <u>Potential opportunity:</u> long-term fixed P_{energy} | <ul style="list-style-type: none"> • REC value = any REC commitments + spot price • Short-term/no REC deal <ul style="list-style-type: none"> • Creditworthiness not as critical |

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REC Value Important to Project Finance

- Market value depends on:
 - Compliance vs. voluntary market
 - Regionality
 - Policy stability
 - Other market rules/conditions
- Financing value depends on:
 - Quality of project
 - Perspective of equity investors



Thank you for your attention!

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